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FORTY-FIVE NEW EXOPLANETS DISCOVERED

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This undated artist's concept provided by NASA shows the Kepler spacecraft. Data pooled from NASA’s Kepler and the ESA’s Gaia space telescopes have confirmed existence of these 44 exoplanets and described various details about them. File | Photo Credit: AP

Scientists have discovered a trove of forty-four planets in solar systems beyond our own in one go, dwarfing the usual number of confirmations from extrasolar surveys.

The findings will improve existing models of solar systems, and may help researchers investigate exoplanet atmospheres.

Novel techniques developed to validate the find could accelerate the confirmation of more extrasolar planet candidates.

Astronomers pooled data from NASA’s Kepler and the ESA’s Gaia space telescopes. They confirmed existence of these 44 exoplanets and described various details about them.

A portion of the findings yield some surprising characteristcs.

“For example, four of the planets orbit their host stars in less than 24 hours,” said John Livingston, a graduate student at the University of Tokyo in Japan.

“In other words, a year on each of those planets is shorter than a day here on Earth,” said Livingston, lead author of the study.

These contribute to a small but growing list of “ultrashort-period” planets, suggesting that they could be more common than previously believed.

What are exoplanets?

“Sixteen were in the same size class as Earth, one in particular turning out to be extremely small - about the size of Venus - which was a nice affirmation, as it’s close to the limit of what is possible to detect,” said Livingston.

Scientists hope to understand what kinds of planets might be out there, but can only draw valid conclusions if there are enough planets for robust statistical analysis.

The addition of a large number of new planets, therefore, leads directly to a better theoretical understanding of solar system formation, researchers said.

The planets also provide good targets for detailed individual studies to yield measurements of planetary composition, interior structure and atmospheres - in particular, the 18 planets in several multi-planet systems.

“The investigation of other solar systems can help us understand how planets and even our own solar system formed. The study of other worlds has much to teach us about our own,” said Livingston.

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